BEFORE THE

Federal Communications Commission

WASHINGTON, D. C. 20554

In the Matter of	)	
	)	
Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service	)	MM Docket 87-268

To: The Commission

SUPPLEMENTAL COMMENTS AND REPLY COMMENTS OF THE COUNTY OF LOS ANGELES, CALIFORNIA

The County of Los Angeles, California ("County") hereby submits the following Supplemental Comments and brief reply to comments filed by other parties in response to the Commission's Second Further Notice of Proposed Rulemaking ("Second Further Notice") in the above-captioned proceeding.

The County's initial Comments explained that the proposed ATV allotments of UHF Channel 15 in Riverside, California, and UHF Channel 16 in San Diego, California, would cause serious destructive interference with adjacent channel and co-channel public safety land mobile radio communications in the Los Angeles area. Subsequent to filing those Comments, the County's Internal Services Department conducted a field study of the impact of the proposed Channel 16 allotment in San Diego (the study was conducted pursuant to Special Temporary Authority granted by the Commission). The results of the study are attached hereto as Appendix A.

The field study used a low power (16 watt) transmitter operating on a UHF Channel 16 land mobile frequency at the location in San Diego proposed for the Channel 16 ATV station. The field strength of the low power transmitter was then measured at existing co-channel base station receive sites used by the Los Angeles County Sheriff's Department. The study demonstrated that even a low power transmitter could be received at levels well in excess of the minimum signal level for the Sheriff's land mobile receiving equipment. A far more powerful co-channel television transmitter in San Diego (even at the reduced power levels proposed for ATV) would, therefore, cause destructive interference to critical land mobile operations of numerous public safety agencies in the Los Angeles basin.

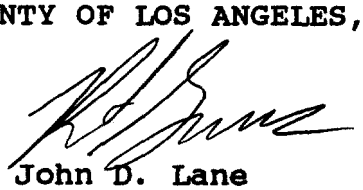
The County notes that both the Land Mobile Communications Council ("LMCC") and the Associated Public-Safety Communications Officers, Inc. ("APCO") supported the County's position regarding the short-spaced adjacent channel and co-channel ATV allotments in Southern California. No initial comments were filed supporting those allotments. However, a few broadcasters did suggest that land mobile users vacate UHF Channels 14-20 and move to the VHF-TV band once the conversion to an all-UHF television service is complete. The County strongly opposes such a forced relocation, which would require replacement (at taxpayer expense) of its recently completed $60 million communications system.

The VHF-TV band, if vacated, should be made available to alleviate current and future shortages of radio spectrum for public safety communications needs. However, existing state and local government users of other bands must not be forced to give up their current frequencies in exchange for the VHF-TV band.

Therefore, for the reasons discussed above and in its initial comments, the County of Los Angeles urges the Commission to reject ATV allotments that would cause interference with or otherwise disrupt vital public safety land mobile radio communications.

Respectfully submitted,

COUNTY OF LOS ANGELES, CALIFORNIA

By: 
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Appendix A

County of Los Angeles
Report on Possible Co-Channel Interference
From ATV Channel 16 in San Diego

Purpose

The purpose of this report is to present data collected from field tests conducted by the Internal Services Department's/Radio Systems Division (RSD) to determine the possibility of co-channel interference from ATV Channel 16 located at Mt. Soledad, San Diego.

RSD will demonstrate that RF output from a low-power, two-way mobile transmitter at Mt. Soledad will easily be captured by the Los Angeles County Sheriff's Department (LASD) receivers located at various County radio sites in Los Angeles County.

Theory

If the RF signal from a low-power transmitter at Mt. Soledad can be received at a level above the 12-dB SINAD threshold of LASD receivers in Los Angeles County, a megawatt-ATV transmitter on channel 16 from the same location will cause harmful co-channel interference to LASD's land-mobile radio system.

Methodology

A low-power test transmitter with a known output power was used to transmit from Mt. Soledad. A spectrum analyzer was used to measure the received signal level at various County radio sites. See Fig.1 for test set up.

Discussion

In FCC's Second Further Notice of Proposed Rule Making, two locations are listed as possible ATV Channel 16 transmit sites to serve the San Diego area. Site #1 is Mt. Soledad with coordinates of latitude: 32-50-20, longitude: 117-14-56. Site #2 is Mt. San Miguel with coordinates of latitude: 32-41-47, longitude: 116-56-07.

RSD has since been informed that Mt. San Miguel is not likely to be the ATV Channel 16 transmit site because its close proximity to Mexico will cause unacceptable interference to Mexico. Therefore, RSD's efforts were concentrated on Mt. Soledad only.

LASD currently has a voice radio system using a portion of Channel 16. The effects of ATV Channel 16 transmissions from San Diego are discussed below.

RSD set up a 16-watt test transmitter at Mt. Soledad. The transmitter was connected to a 10 dBd gain Yagi antenna mounted on a 4-foot tripod. The transmit frequency was one of the assigned frequencies for LASD on Channel 16.

At the receive end, the configuration was identical to the standard LASD receiver system, with the exception that the spectrum analyzer was used in place of a receiver.

The standard LASD receiver system starts with a 10 dBd gain antenna at the top of the tower. A pre-selector filter then filters out undesirable out-of-band frequencies. A preamplifier provides 5 dB gain at each multicoupler's output port.

The test transmitter signal level was observed on the spectrum analyzer and recorded for each radio site. The selected radio sites are:

Abbv	Site Name	Latitude	Longitude
BJM	- Black Jack Mt.,	33-23-12 N	118-24-00 W
DPK	- Dakin Peak,	33-21-00 N	118-21-06 W
TWR	- Tower Peak,	33-25-46 N	118-28-38 W
SPH	- San Pedro Hills,	33-44-50 N	118-20-07 W
RHT	- Rolling Hills,	33-46-07 N	118-22-32 W
SCC	- Sheriff's Comm. Center,	34-03-12 N	118-10-28 W

Analysis

Table 1 shows the field strengths measured at each radio site. The results show that the signal from the low-power transmitter at Mt. Soledad was about 14 to 34 dB above the 12-dB SINAD threshold for a LASD receiver.

If the ATV signal has horizontal polarization, it will provide about 10 to 15 dB of isolation to the LASD system. But since the ATV signal will be much more powerful than the test transmitter (at least 30 dB above the test transmitter), it will definitely cause destructive interference to LASD's land-mobile radio system.

Summary

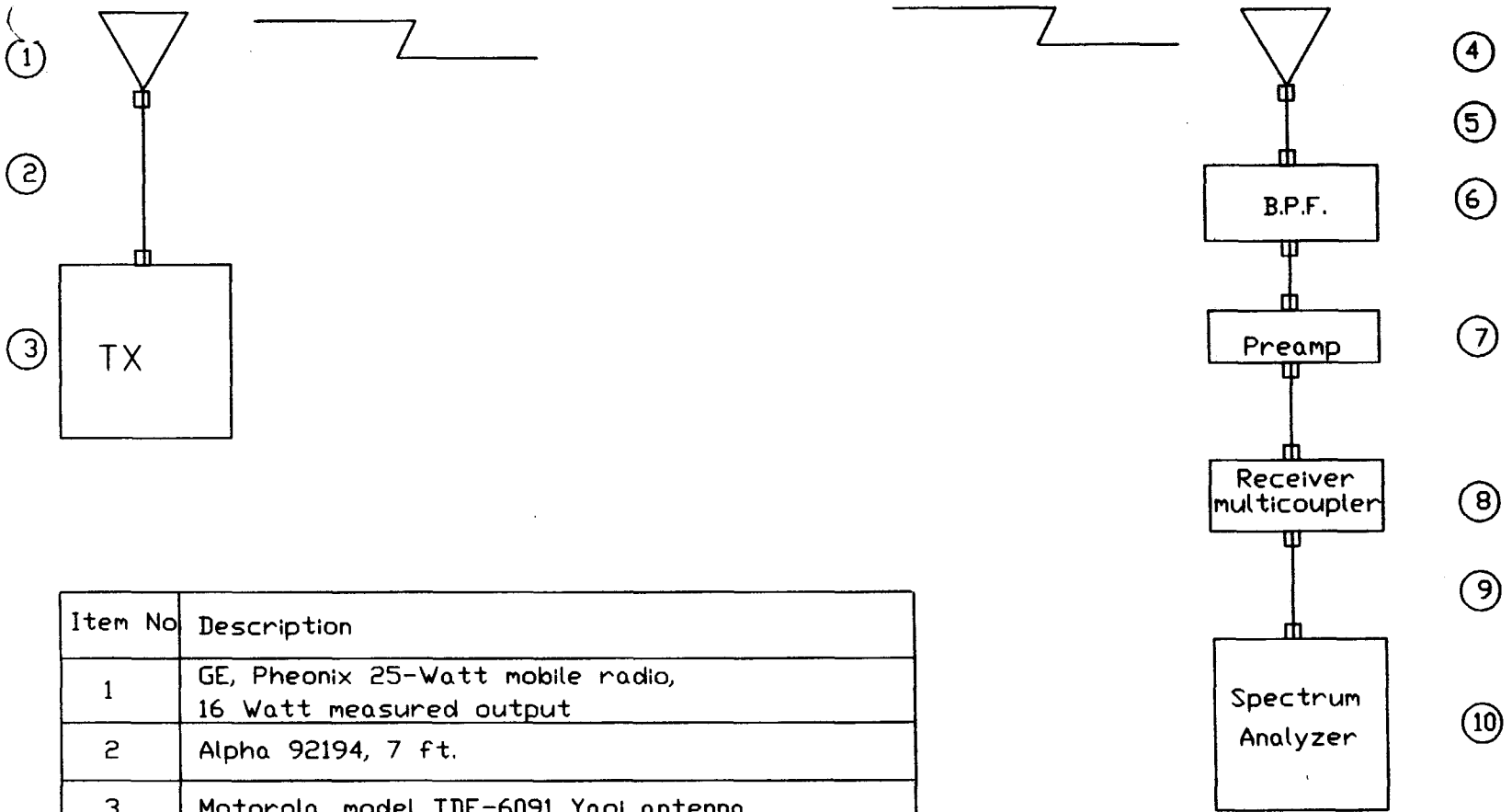
This study shows that a signal from a 16-watt transmitter at Mt. Soledad is easily received by the LASD receivers at County radio sites. With a much more powerful co-channel ATV transmitter at the same location, it can be concluded that the ATV will cause destructive co-channel interference to the LASD land-mobile radio system.

TABLE 1

CHANNEL 16 INTERFERENCE STUDY

SITE: Soledad Mt.
LATITUDE: 32,50,20
LONGITUDE: 117,14,56
GROUND ELEVATION, Feet Amsl.: 695

SITE	BJM	DPK	TWR	SPH	RHT	SCC
LATITUDE	33-23-12 N	33-21-00 N	33-25-46 N	33-44-50 N	33-46-07 N	34-03-12 N
LONGTUDE	118-24-00 W	118-21-06 W	118-28-38 W	118-20-07 W	118-22-32 W	118-10-28 W
GROUND ELEV., Ft. AMSL	2010.00	1600.00	1220.00	1481.00	1196.00	590.00
RX ANTENNA HEIGHT, Ft, AGL	120.00	125.00	100.00	25.00	100.00	150.00
RX FREQUENCY, MHz	486.04	486.04	486.04	486.04	486.04	486.04
PATH LENGTH, MILE	76.60	72.90	81.90	88.70	91.40	99.40
TX OUTPUT, dBW	12.00	12.00	12.00	12.00	12.00	12.00
TX CABLE/CONNECTOR LOSS, dB	1.00	1.00	1.00	1.00	1.00	1.00
TX ANTENNA GAIN, dBd	10.00	10.00	10.00	10.00	10.00	10.00
TX ERP, dBW	21.00	21.00	21.00	21.00	21.00	21.00
MEASURED RECEIVE LEVEL, dBuV/m	46.73	47.73	26.73	46.73	28.73	32.73
RECEIVER 12dB-SINAD THRESHOLD, dBuV/m	12.73	12.73	12.73	12.73	12.73	12.73
SIGNAL LEVEL ABOVE RX THRESHOLD, dB	34.00	35.00	14.00	34.00	16.00	20.00



Item No	Description
1	GE, Pheonix 25-Watt mobile radio, 16 Watt measured output
2	Alpha 92194, 7 ft.
3	Motorola, model TDE-6091 Yagi antenna
4	Celwave, PD-755 omni antenna
5	Andrew, 7/8" Heliax
6	WACOM, WP474-4-C perselector filter
7	Angle Linear, GaAs FET
8	Angle Linear, multicoupler
9	IFR, A-7550 Spectrum Analyzer

Figure 1

a:ATVTEST.DWG